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BULLETIN
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Dr. JAMES G. COOPER.

A SKETCH.

[By W. O. EMERSON, President of the Cooper Ornithological Club.]

IT is proper, and in accordance with the wish of the Club, that the initial number of the BULLETIN should contain a brief sketch of the life of him, in whose honor our Club is named,—Dr. James G. Cooper.

The fact that Dr. Cooper, though very feeble, is yet alive, precludes us from entering upon any detailed view of his private life, even though it be that phase with which his friends most delight. We must, therefore, confine ourselves to the scientific aspect of his life, as it is in this relation that he is best known to thousands who have never met him, and who will be pained to learn that it is almost impossible for him to receive visitors, as it is difficult and painful for him to speak.

When it became necessary for us to visit him to verify certain portions of this sketch, we noticed his evident pleasure when he learned that the Club intended to publish its own BULLETIN, and he expressed the wish to do all that he could to further its interests. To us this meeting was at once a promise and a benediction. For many years he had been to us a friend and a guide, and necessarily our mind reverted to the time when we learned of bird-life at his feet. As we looked on his kindly face and listened to the almost inarticulate words, in memory we traveled backward to the time of our first lesson in bird-life; he sitting on a rock in the shadow of the trees, and the student watching the birds which he noted as they flew about us or jumped from stone to stone, making the air vibrate with their music.

Eighteen years ago! What a vista of time is here unrolled. What changes this period has

wrought, yet in memory he is again giving his first field lesson, taking the Rock Wren for an object study as it sits on a huge blue-gray rock singing to us its song of welcome. Here he talked to us of Nature in all of her varied forms; told of the birds, their songs, their flights, plumage and their home-life; of their loves and hates, joys and sorrows! All of this was told in common language, without scientific nomenclature, and thus we saw Nature and her works through the eyes of one who loved and had long questioned and learned many of her secrets, until the setting sun found us yet worshipping in Nature's temple, and the student gaining his first glimpse into that grand arcana. This was our teacher's manner; thus he gathered around him the young ornithologists and in the field taught them the lessons of bird-life, and it was from the incentives of these field studies that our Club was formed, and in his honor named, and at the Club meeting held December 5, 1896, he was by unanimous vote placed on our roll as an Honorary Life Member.

The Secretary of the Club, Mr. C. Barlow, fully expressed the sentiments of all when, in advising Dr. Cooper of the action, he wrote: "The Club which was named in your honor was organized June 22, 1893. * * * As an organization of comparatively young workers, we all feel indebted to yourself and the few remaining veteran ornithologists for the excellent and valuable material which you have prepared in the years past."

James G. Cooper was born June 19, 1830, in New York, being the eldest of a family of six children. In the spring of 1837, his father, Wil-



DR. JAMES G. COOPER.

William Cooper, moved to New Jersey and settled at Slongha, near Hoboken, where James commenced his school life, but it was not until he was ten years of age that his school life really began, as prior to this time he was subject to many and severe spells of illness. As he was obliged to walk a mile or more through the fields, he took many of the side paths for the purpose of hunting birds, shells, snakes and other objects of natural history, thus early showing the tendency which has marked his later years. During this period and the succeeding years, he was largely indebted to his father for his education and real preparation for his after career. It may be proper that we devote a few words to the father who exerted so great an influence in the son.

His father, William Cooper, was born in the year 1798, and was the son of James Cooper, an English merchant, who, coming to New York shortly after the Revolutionary War, accumulated a comfortable fortune, and died in 1801. William gave up all ideas of business and devoted his life to the study of Nature, inheriting these tastes from his mother, who was Miss Frances Graham. At the age of nineteen William Cooper united with a number of others and established the Lyceum of Natural History of New York, which became the school of many of our noted scientists. Senator Samuel L. Mitchell, M. D., was the first President, who with Cooper laid the foundation of its magnificent museum. Nathaniel Paulding, the poet, was its first Secretary, and William Cooper was Secretary in 1818 when it was incorporated. For many years Dr. John Torrey, who was the educator of many of our noted botanists, was the curator of the museum, and the intimate personal friend of Mr. Cooper, and to him Dr. Torrey dedicated his first real botanical work, *The Botany of the Northern and Middle States*. At this time Prof. Eaton was, under the direction of Courtland Van Rensselaer, making geological surveys. These old records of the Lyceum, which are before us as we write, vividly recall the early struggling days of science in the United States. What a list of scientific workers, do these old files of proceedings recall. Mark the time, 1818 to 1854.

In 1821 William Cooper departed for Europe in order to perfect himself in zoology, and was the first American member of the Zoological Society of London. He attended the lectures of Cuvier and those master minds of the Jardin des Plantes, and on his return to the United States took up the study of Palæontology, be-

ing among the first in our country to engage in this science. He became the warm friend of Schoolcraft who afterwards made for himself a name as a historian of the Indian races. William Cooper was the friend, correspondent and co-laborer of Lucian Bonaparte, and edited the last two volumes of Bonaparte's works, who showed his appreciation of the assistance by dedicating to Cooper one of the finest of his new species, *Falco cooperi*, the type specimen of which was shot by Cooper in Hudson County, N. Y. and, another type specimen, *Ætodornis cooperi*, was also taken by him, and it is unique in the fact that no second specimen has been secured. The result of William Cooper's ornithological work is largely incorporated in Bonaparte's works. He was the friend of Audubon, and Nuttall, and gave them the use of his specimens and notes, and assisted them in their works. He died April 20, 1864, and at this time, he and his life long friend, John Torrey, were the only surviving members of the original Lyceum, Mr. Cooper having been a member forty-seven years.

Nurtured by such influences, his education superintended by such a father, his earliest memory being of the conversations of such men, it would be impossible for the subject of our sketch to be other than that which he has been,—an authority in his own field of study. In 1851 James G. Cooper graduated from the College of Physicians and Surgeons, New York, and henceforth will be known to us as Dr. Cooper. The succeeding two years were spent in the City hospitals, when at the beginning of the year 1853 we find him taking the initiatory step that to him was the turning point of his life; a period in which hope and ambition as regards certain directions became ruling factors and decided his course.

We may be pardoned for dwelling a moment on a period that strengthened his tendencies, and decided the course of his ambitious future. At this time the Government had determined to take some action in regard to a trans-continental railroad, and was making arrangements for a preliminary survey for a route between St. Paul and Puget Sound, and, on April 27, 1853, Dr. Cooper signed a contract with Gov. I. I. Stevens, (who had lately been appointed Governor of the Territory of Washington, and placed in charge of the survey) as one of the physicians to the survey. This appointment meant more to him than the mere \$70.00 a month that he received, as it brought him into direct contact with those bright and

able minds whose after acts became a large portion of the history of our country, and of science. What a galaxy of bright names have been clustered around this survey. These were the men with whom our friend lived, thought and acted.

To the Eastern division Dr. Suckley was assigned, while Dr. Cooper was assigned to the Western under the direct superintendence of Brevet Captain Geo. B. McClellan of the Engineer Corps, to whom he reported June 14, 1853.

At this point we must digress to note the names here associated, which in a few years were to stand as the supporters of principles whose final disposition was made the basis of our Civil War. Jefferson C. Davis wrote and issued Dr. Cooper's instructions; Geo. B. McClellan was his immediate commander; U. S. Grant was the Regimental Quartermaster that issued his supplies; A. J. Donelson was in command of the escort and Hardie in command of the Division of the Pacific. As we read the orders and documents signed by these men, what memories are awakened!

Connected with this survey was Mullen, who afterwards became the roadmaker. There were John Torrey, Asa Gray, F. V. Hayden, Gibbs, Meek, Baird, Le Conte, Lesquereux, Warren, Suckley and others who were co-laborers with Dr. Cooper, and who have written their names on the scroll of the world of science. From June 14, 1853 to April 1, 1854, Dr. Cooper was engaged in making botanical and zoological collections and meteorological observations. This latter work was the peculiar duty that was always assigned to the surgeons of the army, but until this time it had not been productive of any tangible results, although Blodgett had attempted to formulate some of the laws regarding climatic conditions, and was busy in reducing the accumulated observations, and Redfield had propounded his theory of storms. While engaged in the study of the forest growth of the Northwest, Dr. Cooper's attention was directly called to the correspondence between the forest distribution and climatic influences, which largely determined the environment. The result of this study was communicated to the public through the Smithsonian Institute, and was the first systematic statement regarding the forest growth that was issued by the Government.

While Dr. Cooper can not be regarded as a professional meteorologist, yet the reductions of the observations of this survey are models,

and these observations had a profound influence on his future work. The survey was disbanded April 1, 1854, and McClellan ordered our friend to report to Gov. Stevens at Fort Vancouver. His specimens were transmitted to Prof. Baird at Washington, to which place he soon went for the purpose of preparing his report. Returning to the coast he spent the entire year of 1855 in collecting specimens of natural history, and it was at this time that his attention was so strongly fixed upon that line of thought in which probably he is best known—that of Conchology. His report on the ornithology of the survey has become a model, and is marked by deep, searching and comprehensive observations. Dr. Suckley was a joint author with Cooper, and reported on a separate section.

Late in the fall of 1855 Dr. Cooper went up the coast to Gray's Harbor, joining the Indian Treaty Commission under Gov. Stevens, intending to accompany the Governor to the Blackfoot Council at Fort Benton, but in this he was disappointed. In the meantime he made a voyage to the Straits of Fuca and spent a month on Whitby's Island, collecting specimens, returning to Shoalwater Bay in July where he remained until Oct. 4, when he sailed in the Coast Survey steamer *Active*, by invitation of Capt. Allen, to San Francisco. He spent six weeks collecting specimens in the Santa Clara Valley, then proceeding southward to Panama he collected shells for his father, whose last scientific writing was a report on West Coast shells, *Pacific R. R. Report*. This large collection passed into the hands of the Chicago Academy of Sciences and was destroyed in the great fire. Dr. Suckley was not with him at this time, he having returned to the East. Altogether Dr. Cooper spent two years and three months in Washington Territory, and this was really his school of preparation. From April 1, 1854, until 1857, all of the work that he did was by his own private enterprise and in obedience to his love for science, and it is at this point that we bid farewell to the botanist and welcome the ornithologist and conchologist.

On April 22, 1857, Dr. Cooper was by the Secretary of the Interior, appointed Surgeon to the Wagon Road from Fort Kearney to the South Pass and Honey Lake. However, when the expedition reached the Rocky Mountains, it became necessary to disband it, and the Doctor went on a collecting trip through the Mojave desert. The results of this trip are contained in his various reports on the fauna of

Montana, Wyoming and the Mojave, and are scattered through his later writings. On April 16, 1860, Gen. W. S. Scott issued special order No. 47, directing Dr. J. G. Cooper as Contract Surgeon, to report at New York, and to proceed thence to Fort Columbus, Department of Oregon, accompanying a detachment of recruits. This duty terminated Oct. 19, 1860, but his contract was continued to Dec. 1 of that year. Again as a student we find him collecting along the coast from San Francisco to San Diego. From now henceforward we view the energetic, thoughtful, scientific mind. From 1861 to 1874 was one continuous series of field observations and studies, the results of which are embraced in his numerous publications until the year 1890. This period will again be examined when we speak of his publications.

The gigantic struggle of the Civil War found him a student and an active worker in the field of science. Watching this struggle, listening to the roll-calls of the dead, sick and wounded, he again sought service in the army, and on May 24, 1864, Gov. F. F. Law commissioned him as Assistant Surgeon, 2d Cavalry, California Volunteers, and he served with this regiment until its muster out. Even during this period he did not relinquish his scientific work, which was that of identification of individual specimens, of reference, and in publishing his observations. He was now a systematist and not a collector. January 9, 1866, he was married to Miss Rosa M. Wells at Oakland, California.

It is not our purpose to draw aside the curtain that separates his scientific and public life from the sanctity of his home-life. At present we feel that we have no right to enter the home and to paint the picture of the peace and happiness of that home circle, where, surrounded by wife and children, he, in perfect security and the loving trust of a well spent life, calmly awaits the summons that shall bid him move to another home. Sometime it may be our duty and pleasure to draw the picture of his home life and to write more fully of his scientific life, but the time is not yet come, and it may be that other and better pens than ours may perform this duty, but none would bring to its accomplishment more loyal labor. Until 1871 Dr. Cooper was in the active practice of his profession, when his health failing, he moved to Ventura County, California, and remained there engaged in collecting until in 1875 he moved to Hayward, California where he now resides.

Thus far we have carried a brief, running itinerary, as it were, of his scientific life, recounting his movements until the time that he moved to Haywards, at which it is our purpose to leave this view of his life, and take up the purely scientific portion and his publications. In 1858 Dr. Cooper was made a member of the New York Lyceum, now New York Academy of Sciences. Although not one of the charter members of the California Academy of Sciences, he is one of its early members, and until failing health prevented, one of its earnest and active workers, holding for several years the office of Vice President and one term as Second Vice President. During the time of the auxiliary clubs he was the President of the Zoological Club. Much of his active work in connection with the Academy has been in palæontology, and he was for some time curator of this section. A large number of his works were first published in the Proceedings of the Academy. He did considerable work on the Geological Survey of California under Whitney, a portion of this being in pure geology and a portion in palæontology. He compiled the catalogue of California Fossils for the Mining Bureau.

Our first impulse was to give a full catalogue of his publications, but having arranged a full list of titles, we have thought it would meet the requirements of this sketch in a better manner if a synopsis by subjects were given in lieu of the catalogue: On Conchology, 43 papers, Botany, 6 papers, Ornithology, 12 papers, Mammals, 8 papers, other scientific subjects, 7 papers. Total, 76. While his scientific work has been a varied one, it is his ornithological work that particularly interests our Club, and it may be inappropriate for the BULLETIN to present any other phase, yet before examining his ornithological contributions we cannot refrain from mentioning other work for the reason that it bears so directly on certain phases of his purely ornithological work. Necessarily we must omit any reference to conchology and palæontology, as the scope of the BULLETIN will not admit of such discussion. Nor is it our present purpose to critically examine his ornithological writings, but rather to draw attention to the fact that Dr. Cooper is one of our best ornithologists, because, to many, the conchologist has overshadowed the ornithologist in his work. We wish now to refer directly to the work that in reality was the result of his meteorological observations and directed his attention to the question of the geographical distribution of

plants and animals. This subject has been distinctive of all of his later work, and if we are not in error, he was the first to note the particular laws governing the environment of bird-life.

At the time he presented his essay on the geographical distribution of plants, no one in the United States, and only De Candalle, Richard and Humboldt in Europe, had critically examined this subject, and Michaux, on the basis of the forest growth of a portion of the United States had noted it. While Pursh, Bartram, Nuttall, Barton and Torrey had preceded him, they are silent on the laws or conditions governing the distribution, and while Douglas and Eschscholtz preceded him on the West Coast and noted cases of geographical distribution, they were from the very paucity of systematic observations unable to formulate any scientific generalizations. Then we regard this essay as the first systematic presentation of this subject in the United States. From the plants he carried this question into the life history of the *Mollusca*, and thence he laid the foundation of his generalizations regarding the distribution of bird-life. There can be no doubt that this question of geographical distribution has marked and modified our views of the life history of birds, and from the mere descriptive technology of ornithology, we have opened a new and varied field of ornithological study. In this particular field he has been a pioneer, and it is a portion of the special work of this Club. To the scientist the work of Dr. Cooper is of special value, and this is acknowledged and emphasized by Prof. Baird, who says: "By far the most valuable contribution to the biography of American birds that has appeared since the time of Audubon, is that written by Dr. J. G. Cooper in the Geological Survey of California,"—(BAIRD *North American Land Birds*. Preface page 1.)

While the number of his publications on conchology exceeds those on ornithology, in the latter they have taken the form of finished works or monographs, which have such a value as attaches to the works of Audubon, Baird, Wilson and Bendire. During his work on the Pacific Coast Dr. Cooper discovered and established ten forms, which will be made the subject of a paper in our next issue.

Lewis' and Clarke's explorations to the head waters of the Missouri River made known to us that vast expanse of territory known as the Northwest and Audubon, Nuttall and Townsend were the first to describe and make

known its zoology. The exploration of Maj. Long in 1870, of which Dr. Edwin James was the scientist, reached to the south and west of the territory covered by Lewis and Clark, but did not to any great extent enlarge our knowledge of its zoology, as James was a better botanist than zoologist. To a certain extent the same may be remarked respecting the explorations of Fremont. The botany of these several surveys and explorations was particularly elaborated by Torrey, Gray, James and Eaton, while the zoology was not so thoroughly elaborated.

In 1831 Sir John Richardson published the results of his observations of a portion of the territory covered by the Hudson Bay Company, but none of these, however, explored Colorado, Arizona, Nevada and California, although the work of Eschscholtz covered a portion, and it was not until the Geological Survey of California under Whitney that this territory really became known to science. Thus this survey becomes a starting point and a scientific epoch, as it were. To this survey Dr. Cooper was assigned as zoologist and by mutual consent between he and Whitney, the notes and specimens were to be placed in the hands of Prof. Baird for elaboration at the Smithsonian Institute, and to be finally published as a portion of the work on *The Land and Water Birds of North America* by Baird, Brewer and Ridgway. This arrangement, however, was not practically carried out, and a large portion of this work was published by Whitney as a part of the California Reports. A portion of the bird skins were deposited at the State University at Berkeley.

Thus it was the zoological work of Dr. Cooper in connection with this survey that has so enlarged our real knowledge of the zoology of this section. Thus, from December 1860 until April 1862, and a considerable portion of 1863 he was collecting in the Colorado Valley near Fort Mojave. This included the vicinity of San Diego, San Pedro, Santa Barbara and the islands of the coast. In 1864 he explored a portion of the coast from Bolinas Bay to Santa Cruz, and during a portion of this time (1862) was assisted by Dr. Edward Palmer. During this period he did a large amount of gratuitous work, in the way of elaborating the material in various branches of the zoology of the Pacific Coast. In 1865 he prepared his series of reports on the higher classes of animals. We hope that this preliminary sketch will call attention to Dr. Cooper's ornithological work, and while it is not intended to be critical, we have attempted to do him justice as an original observer and as an author. In a subsequent issue of the BULLETIN we will give a detailed catalogue of his ornithological publications expressly prepared for students who wish to examine them.